

SEQUENCE LISTING

<110> EISENBACK-SCHWARTZ, Michal  
COHEN, Irun R.  
BESERMAN, Pierre  
MOSONEGO, Alon  
MOALEM, Gila

<120> ACTIVATED T-CELLS, NERVOUS SYSTEM-SPECIFIC ANTIGENS AND THEIR USES

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<151> 1999-05-19

<150> US 09/218,277  
<151> 1998-12-22

<150> PCT/US98/14715  
<151> 1998-07-21

<150> IL 124500  
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<170> PatentIn version 3.1

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His Arg Asp Thr Gly Ile Leu Asp Ser Ile Gly Arg Phe Phe Gly Gly  
 35              40                           45

Asp Arg Gly Ala Pro Lys Arg Gly Ser Gly Lys Asp Ser His His Pro  
 50              55                           60

Ala Arg Thr Ala His Tyr Gly Ser Leu Pro Gln Lys Ser His Gly Arg  
 65              70                           75                           80

Thr Gln Asp Glu Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr  
 85              90                           95

Pro Arg Thr Pro Pro Pro Ser Gln Gly Lys Gly Arg Gly Leu Ser Leu  
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Ser Arg Phe Ser Trp Gly Ala Glu Gly Gln Arg Pro Gly Phe Gly Tyr  
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Gly Gly Arg Ala Ser Asp Tyr Lys Ser Ala His Lys Gly Phe Lys Gly  
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Asp Ser Arg Ser Gly Ser Pro Met Ala Arg Arg  
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35 40 45

Thr Tyr Phe Ser Lys Asn Tyr Gln Asp Tyr Glu Tyr Leu Ile Asn Val  
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Ile His Ala Phe Gln Tyr Val Ile Tyr Gly Thr Ala Ser Phe Phe Phe  
65 70 75 80

Leu Tyr Gly Ala Leu Leu Ala Glu Gly Phe Tyr Thr Thr Gly Ala  
85 90 95

Val Arg Gln Ile Phe Gly Asp Tyr Lys Thr Thr Ile Cys Gly Lys Gly  
100 105 110

Leu Ser Ala Thr Val Thr Gly Gly Gln Lys Gly Arg Gly Ser Arg Gly  
115 120 125

Gln His Gln Ala His Ser Leu Glu Arg Val Cys His Cys Leu Gly Lys  
130 135 140

Trp Leu Gly His Pro Asp Lys Ile Thr Tyr Ala Leu Thr Val Val Trp  
145 150 155 160

Leu Leu Val Phe Ala Cys Ser Ala Val Pro Val Tyr Ile Tyr Phe Asn  
165 170 175

Thr Trp Thr Thr Cys Gln Ser Ile Ala Phe Pro Ser Lys Thr Ser Ala  
180 185 190

Ser Ile Gly Ser Leu Cys Ala Asp Ala Arg Met Tyr Gly Val Leu Pro  
195 200 205

Trp Asn Ala Phe Pro Gly Lys Val Cys Gly Ser Asn Leu Leu Ser Ile  
210 215 220

Cys Lys Thr Ala Glu Phe Gln Met Thr Phe His Leu Phe Ile Ala Ala  
225 230 235 240

Phe Val Gly Ala Ala Ala Thr Leu Val Ser Leu Leu Thr Phe Met Ile  
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Lys Phe

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Arg Val Ile Gly Pro Arg His Pro Ile Arg Ala Leu Val Gly Asp Glu  
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Val Glu Leu Pro Cys Arg Ile Ser Pro Gly Lys Asn Ala Thr Gly Met  
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Glu Val Gly Trp Tyr Arg Pro Pro Phe Ser Arg Val Val His Leu Tyr  
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Arg Asn Gly Lys Asp Gln Asp Gly Asp Gln Ala Pro Glu Tyr Arg Gly  
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Arg Thr Glu Leu Leu Lys Asp Ala Ile Gly Glu Gly Lys Val Thr Leu  
100 105 110

Arg Ile Arg Asn Val Arg Phe Ser Asp Glu Gly Gly Phe Thr Cys Phe  
115 120 125

Phe Arg Asp His Ser Tyr Gln Glu Glu Ala Ala Met Glu Leu Lys Val  
130 135 140

Glu Asp Pro Phe Tyr Trp Val Ser Pro Gly Val Leu Val Leu Leu Ala  
145 150 155 160

Val Leu Pro Val Leu Leu Gln Ile Thr Leu Gly Leu Val Phe Leu  
165 170 175

Cys Leu Gln Tyr Arg Leu Arg Gly Lys Leu Arg Ala Glu Ile Glu Asn  
180 185 190

Leu His Arg Thr Phe Asp Pro His Phe Leu Arg Val Pro Cys Trp Lys  
195 200 205

Ile Thr Leu Phe Val Ile Val Pro Val Leu Gly Pro Leu Val Ala Leu  
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Tyr Gly

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Thr	Asp	Ser	Pro	Pro	Arg	Pro	Pro	Pro	Ala	Phe	Lys	Tyr	Gln	Phe	Val		
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Thr	Glu	Pro	Glu	Asp	Glu	Asp	Glu	Glu	Glu	Glu	Glu	Glu	Asp	Glu	Glu		
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gag	gac	gac	gag	gac	cta	gag	gaa	ctg	gag	gtg	ctg	gag	agg	aag	ccc	435	
Glu	Asp	Asp	Glu	Asp	Leu	Glu	Leu	Glu	Leu	Glu	Val	Leu	Glu	Arg	Lys	Pro	
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Ala	Ala	Gly	Leu	Ser	Ala	Ala	Ala	Val	Pro	Pro	Ala	Ala	Ala	Ala	Pro		
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Leu	Leu	Asp	Phe	Ser	Ser	Asp	Ser	Val	Pro	Pro	Ala	Pro	Arg	Gly	Pro		
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ctg	ccg	gcc	gct	ccc	cct	gcc	gct	cct	gag	agg	cag	cca	tcc	tgg	gaa		579
Leu	Pro	Ala	Ala	Pro	Pro	Ala	Ala	Pro	Glu	Arg	Gln	Pro	Ser	Trp	Glu		
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Pro	Ser	Thr	Pro	Ala	Ala	Pro	Lys	Arg	Arg	Gly	Ser	Gly	Ser	Val	Asp		
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gaa	gaa	act	tta	aat	gaa	gct	tct	aaa	gag	ttt	cca	gag	agg	gca	aca		1059
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aat	cca	ttt	gt	aat	aga	gat	tta	gca	gaa	ttt	tca	gaa	tta	gaa	tat		1107
Asn	Pro	Phe	Val	Asn	Arg	Asp	Leu	Ala	Glu	Phe	Ser	Glu	Leu	Glu	Tyr		
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tca	gaa	atg	gga	tca	tct	ttt	aaa	ggc	tcc	cca	aaa	gga	gag	tca	cc		1155
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cct gtg ggt aaa gaa gac aga gtt gtg tct cca gaa aag aca atg gac Pro Val Gly Lys Glu Asp Arg Val Val Ser Pro Glu Lys Thr Met Asp 335	340	345	1299
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cca gaa cct gtg aag gac agc tcc aga gca tat att acc tgt gct tcc Pro Glu Pro Val Lys Asp Ser Ser Arg Ala Tyr Ile Thr Cys Ala Ser 430	435	440	1587
ttt acc tca gca acc gaa agc acc aca gca aac act ttc cct ttg tta Phe Thr Ser Ala Thr Glu Ser Thr Ala Asn Thr Phe Pro Leu Leu 450	455	460	1635
gaa gat cat act tca gaa aat aaa aca gat gaa aaa aaa ata gaa gaa Glu Asp His Thr Ser Glu Asn Lys Thr Asp Glu Lys Lys Ile Glu Glu 465	470	475	1683
agg aag gcc caa att ata aca gag aag act agc ccc aaa acg tca aat Arg Lys Ala Gln Ile Ile Thr Glu Lys Thr Ser Pro Lys Thr Ser Asn 480	485	490	1731
cct ttc ctt gta gca gta cag gat tct gag gca gat tat gtt aca aca Pro Phe Leu Val Ala Val Gln Asp Ser Glu Ala Asp Tyr Val Thr Thr 495	500	505	1779
gat acc tta tca aag gtg act gag gca gca gtg tca aac atg cct gaa Asp Thr Leu Ser Lys Val Thr Glu Ala Ala Val Ser Asn Met Pro Glu 510	515	520	1827

ggt ctg acg cca gat tta gtt cag gaa gca tgt gaa agt gaa ctg aat Gly Leu Thr Pro Asp Leu Val Gln Glu Ala Cys Glu Ser Glu Leu Asn	530	535	540	1875
gaa gcc aca ggt aca aag att gct tat gaa aca aaa gtg gac ttg gtc Glu Ala Thr Gly Thr Lys Ile Ala Tyr Glu Thr Lys Val Asp Leu Val	545	550	555	1923
caa aca tca gaa gct ata caa gaa tca ctt tac ccc aca gca cag ctt Gln Thr Ser Glu Ala Ile Gln Glu Ser Leu Tyr Pro Thr Ala Gln Leu	560	565	570	1971
tgc cca tca ttt gag gaa gct gaa gca act ccg tca cca gtt ttg cct Cys Pro Ser Phe Glu Glu Ala Glu Ala Thr Pro Ser Pro Val Leu Pro	575	580	585	2019
gat att gtt atg gaa gca cca tta aat tct ctc ctt cca agc gct ggt Asp Ile Val Met Glu Ala Pro Leu Asn Ser Leu Leu Pro Ser Ala Gly	590	595	600	605
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gaa gaa gcc atg aat gta gca cta aaa gct ttg gga aca aag gaa gga Glu Glu Ala Met Asn Val Ala Leu Lys Ala Leu Gly Thr Lys Glu Gly	640	645	650	2211
ata aaa gag cct gaa agt ttt aat gca gct gtt cag gaa aca gaa gct Ile Lys Glu Pro Glu Ser Phe Asn Ala Ala Val Gln Glu Thr Glu Ala	655	660	665	2259
cct tat ata tcc att gcg tgt gat tta att aaa gaa aca aag ctc tcc Pro Tyr Ile Ser Ile Ala Cys Asp Leu Ile Lys Glu Thr Lys Leu Ser	670	675	680	2307
act gag cca agt cca gat ttc tct aat tat tca gaa ata gca aaa ttc Thr Glu Pro Ser Pro Asp Phe Ser Asn Tyr Ser Glu Ile Ala Lys Phe	690	695	700	2355
gag aag tcg gtg ccc gaa cac gct gag cta gtg gag gat tcc tca cct Glu Lys Ser Val Pro Glu His Ala Glu Leu Val Glu Asp Ser Ser Pro	705	710	715	2403
gaa tct gaa cca gtt gac tta ttt agt gat gat tcg att cct gaa gtc Glu Ser Glu Pro Val Asp Leu Phe Ser Asp Asp Ser Ile Pro Glu Val	720	725	730	2451
cca caa aca caa gag gag gct gtg atg ctc atg aag gag agt ctc act Pro Gln Thr Gln Glu Ala Val Met Leu Met Lys Glu Ser Leu Thr	735	740	745	2499
gaa gtg tct gag aca gta gcc cag cac aaa gag gag aga ctt agt gcc Glu Val Ser Glu Thr Val Ala Gln His Lys Glu Glu Arg Leu Ser Ala				2547

750	755	760	765	
tca cct cag gag cta gga aag cca tat tta gag tct ttt cag ccc aat Ser Pro Gln Glu Leu Gly Lys Pro Tyr Leu Glu Ser Phe Gln Pro Asn				2595
770		775		780
tta cat agt aca aaa gat gct gca tct aat gac att cca aca ttg acc Leu His Ser Thr Lys Asp Ala Ala Ser Asn Asp Ile Pro Thr Leu Thr				2643
785		790		795
aaa aag gag aaa att tct ttg caa atg gaa gag ttt aat act gca att Lys Lys Glu Lys Ile Ser Leu Gln Met Glu Glu Phe Asn Thr Ala Ile				2691
800		805		810
tat tca aat gat gac tta ctt tct tct aag gaa gac aaa ata aaa gaa Tyr Ser Asn Asp Asp Leu Leu Ser Ser Lys Glu Asp Lys Ile Lys Glu				2739
815		820		825
agt gaa aca ttt tca gat tca tct ccg att gag ata ata gat gaa ttt Ser Glu Thr Phe Ser Asp Ser Ser Pro Ile Glu Ile Ile Asp Glu Phe				2787
830		835		840
845				
ccc acg ttt gtc agt gct aaa gat gat tct cct aaa tta gcc aag gag Pro Thr Phe Val Ser Ala Lys Asp Asp Ser Pro Lys Leu Ala Lys Glu				2835
850		855		860
tac act gat cta gaa gta tcc gac aaa agt gaa att gct aat atc caa Tyr Thr Asp Leu Glu Val Ser Asp Lys Ser Glu Ile Ala Asn Ile Gln				2883
865		870		875
agc ggg gca gat tca ttg cct tgc tta gaa ttg ccc tgt gac ctt tct Ser Gly Ala Asp Ser Leu Pro Cys Leu Glu Leu Pro Cys Asp Leu Ser				2931
880		885		890
ttc aag aat ata tat cct aaa gat gaa gta cat gtt tca gat gaa ttc Phe Lys Asn Ile Tyr Pro Lys Asp Glu Val His Val Ser Asp Glu Phe				2979
895		900		905
tcc gaa aat agg tcc agt gta tct aag gca tcc ata tcg cct tca aat Ser Glu Asn Arg Ser Ser Val Ser Lys Ala Ser Ile Ser Pro Ser Asn				3027
910		915		920
925				
gtc tct gct ttg gaa cct cag aca gaa atg ggc agc ata gtt aaa tcc Val Ser Ala Leu Glu Pro Gln Thr Glu Met Gly Ser Ile Val Lys Ser				3075
930		935		940
aaa tca ctt acg aaa gaa gca gag aaa aaa ctt cct tct gac aca gag Lys Ser Leu Thr Lys Glu Ala Glu Lys Lys Leu Pro Ser Asp Thr Glu				3123
945		950		955
aaa gag gac aga tcc ctg tca gct gta ttg tca gca gag ctg agt aaa Lys Glu Asp Arg Ser Leu Ser Ala Val Leu Ser Ala Glu Leu Ser Lys				3171
960		965		970
act tca gtt gtt gac ctc ctc tac tgg aga gac att aag aag act gga Thr Ser Val Val Asp Leu Leu Tyr Trp Arg Asp Ile Lys Lys Thr Gly				3219
975		980		985

gtg gtg ttt ggt gcc agc tta ttc ctg ctg ctg tct ctg aca gtg ttc		3267
Val Val Phe Gly Ala Ser Leu Phe Leu Leu Ser Leu Thr Val Phe		
990 995 1000 1005		
agc att gtc agt gta acg gcc tac att gcc ttg gcc ctg ctc tcg		3312
Ser Ile Val Ser Val Thr Ala Tyr Ile Ala Leu Ala Leu Leu Ser		
1010 1015 1020		
gtg act atc agc ttt agg ata tat aag ggc gtg atc cag gct atc		3357
Val Thr Ile Ser Phe Arg Ile Tyr Lys Gly Val Ile Gln Ala Ile		
1025 1030 1035		
cag aaa tca gat gaa ggc cac cca ttc agg gca tat tta gaa tct		3402
Gln Lys Ser Asp Glu Gly His Pro Phe Arg Ala Tyr Leu Glu Ser		
1040 1045 1050		
gaa gtt gct ata tca gag gaa ttg gtt cag aaa tac agt aat tct		3447
Glu Val Ala Ile Ser Glu Glu Leu Val Gln Lys Tyr Ser Asn Ser		
1055 1060 1065		
gct ctt ggt cat gtg aac agc aca ata aaa gaa ctg agg cgg ctt		3492
Ala Leu Gly His Val Asn Ser Thr Ile Lys Glu Leu Arg Arg Leu		
1070 1075 1080		
tcc tta gtt gat gat tta gtt gat tcc ctg aag ttt gca gtg ttg		3537
Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys Phe Ala Val Leu		
1085 1090 1095		
atg tgg gtg ttt act tat gtt ggt gcc ttg ttc aat ggt ctg aca		3582
Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly Leu Thr		
1100 1105 1110		
cta ctg att tta gct ctg atc tca ctc ttc agt att cct gtt att		3627
Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Ile Pro Val Ile		
1115 1120 1125		
tat gaa cgg cat cag gtg cag ata gat cat tat cta gga ctt gca		3672
Tyr Glu Arg His Gln Val Gln Ile Asp His Tyr Leu Gly Leu Ala		
1130 1135 1140		
aac aag agt gtt aag gat gcc atg gcc aaa atc caa gca aaa atc		3717
Asn Lys Ser Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile		
1145 1150 1155		
cct gga ttg aag cgc aaa gca gat tga aaaagccccca aacagaagtt		3764
Pro Gly Leu Lys Arg Lys Ala Asp		
1160		
catctttaaa gggcacactc acttgattac ggggtggga gggcagggg tgagcccttg		3824
gtggccgtgc ggtttcagct ctttattttt agcagtgcac tgtttgagga aaaattacct		3884
gtcttgactt cctgtgttta tcatcttaag tattgttaag tgctgtgtat ggatctcatt		3944
gtagtcacac ttgtcttccc caatgaggcg cctggtaat aaaggactcg gggaaagctg		4004
tgcattgtat ctgctgcagg gtagtcttagc tgtatgcaga gagttgtaaa gaaggcaaat		4064

ctgggggcag ggaaaaccct tttcacagtg tactgtgtt ggtcagtgtaaactgatgc	4124
agatttttct gaaatgaaat gttagatga gagcatacta ctaaaggcaga gtggaaaact	4184
ctgtctttat ggtgtgttct aggtgtattt gtaatttact gttatattgc caatataagt	4244
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cccccacagt gcttgacctc tgagtcattt gttatgcagt gtagtccaag cacataaact	4364
aggaagagaa atgtatttgt aggagtgcta cctaccacct gtttcaaga aaatatagaa	4424
ctccaacaaa aatataaat gtcatttcaa agacttactg tatgtatagt taatttgtc	4484
acagactctg aaattctatg gactgaattt catgttcca aatgtttgca gttatcaaac	4544
attgttatgc aagaaatcat aaaatgaaga cttataccat tgtggtttaa gccgtactga	4604
attatctgtg gaatgcattt gtaactgtaa aagcaaagta tcaataaagc ttatagatct	4664
aaaaaaaaaaaaaaa aaaaaaaaaaaaaa	4684

<210> 18  
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 <212> PRT  
 <213> Rattus norvegicus

<400> 18

Met Glu Asp Ile Asp Gln Ser Ser Leu Val Ser Ser Ser Thr Asp Ser			
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Pro Pro Arg Pro Pro Ala Phe Lys Tyr Gln Phe Val Thr Glu Pro			
20	25	30	

Glu Asp Glu Glu Asp Glu Glu Glu Glu Asp Glu Glu Glu Asp Asp			
35	40	45	

Glu Asp Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly			
50	55	60	

Leu Ser Ala Ala Ala Val Pro Pro Ala Ala Ala Pro Leu Leu Asp			
65	70	75	80

Phe Ser Ser Asp Ser Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala			
85	90	95	

Ala Pro Pro Ala Ala Pro Glu Arg Gln Pro Ser Trp Glu Arg Ser Pro			
100	105	110	

Ala Ala Pro Ala Pro Ser Leu Pro Pro Ala Ala Val Leu Pro Ser  
115 120 125

Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro Pro Pro  
130 135 140

Pro Ala Gly Ala Ser Pro Leu Ala Glu Pro Ala Ala Pro Pro Ser Thr  
145 150 155 160

Pro Ala Ala Pro Lys Arg Arg Gly Ser Gly Ser Val Asp Glu Thr Leu  
165 170 175

Phe Ala Leu Pro Ala Ala Ser Glu Pro Val Ile Pro Ser Ser Ala Glu  
180 185 190

Lys Ile Met Asp Leu Met Glu Gln Pro Gly Asn Thr Val Ser Ser Gly  
195 200 205

Gln Glu Asp Phe Pro Ser Val Leu Leu Glu Thr Ala Ala Ser Leu Pro  
210 215 220

Ser Leu Ser Pro Leu Ser Thr Val Ser Phe Lys Glu His Gly Tyr Leu  
225 230 235 240

Gly Asn Leu Ser Ala Val Ser Ser Ser Glu Gly Thr Ile Glu Glu Thr  
245 250 255

Leu Asn Glu Ala Ser Lys Glu Leu Pro Glu Arg Ala Thr Asn Pro Phe  
260 265 270

Val Asn Arg Asp Leu Ala Glu Phe Ser Glu Leu Glu Tyr Ser Glu Met  
275 280 285

Gly Ser Ser Phe Lys Gly Ser Pro Lys Gly Glu Ser Ala Ile Leu Val  
290 295 300

Glu Asn Thr Lys Glu Glu Val Ile Val Arg Ser Lys Asp Lys Glu Asp  
305 310 315 320

Leu Val Cys Ser Ala Ala Leu His Ser Pro Gln Glu Ser Pro Val Gly  
325 330 335

Lys Glu Asp Arg Val Val Ser Pro Glu Lys Thr Met Asp Ile Phe Asn  
340 345 350

Glu Met Gln Met Ser Val Val Ala Pro Val Arg Glu Glu Tyr Ala Asp  
355 360 365

Phe Lys Pro Phe Glu Gln Ala Trp Glu Val Lys Asp Thr Tyr Glu Gly  
370 375 380

Ser Arg Asp Val Leu Ala Ala Arg Ala Asn Val Glu Ser Lys Val Asp  
385 390 395 400

Arg Lys Cys Leu Glu Asp Ser Leu Glu Gln Lys Ser Leu Gly Lys Asp  
405 410 415

Ser Glu Gly Arg Asn Glu Asp Ala Ser Phe Pro Ser Thr Pro Glu Pro  
420 425 430

Val Lys Asp Ser Ser Arg Ala Tyr Ile Thr Cys Ala Ser Phe Thr Ser  
435 440 445

Ala Thr Glu Ser Thr Thr Ala Asn Thr Phe Pro Leu Leu Glu Asp His  
450 455 460

Thr Ser Glu Asn Lys Thr Asp Glu Lys Lys Ile Glu Glu Arg Lys Ala  
465 470 475 480

Gln Ile Ile Thr Glu Lys Thr Ser Pro Lys Thr Ser Asn Pro Phe Leu  
485 490 495

Val Ala Val Gln Asp Ser Glu Ala Asp Tyr Val Thr Thr Asp Thr Leu  
500 505 510

Ser Lys Val Thr Glu Ala Ala Val Ser Asn Met Pro Glu Gly Leu Thr  
515 520 525

Pro Asp Leu Val Gln Glu Ala Cys Glu Ser Glu Leu Asn Glu Ala Thr  
530 535 540

Gly Thr Lys Ile Ala Tyr Glu Thr Lys Val Asp Leu Val Gln Thr Ser  
545 550 555 560

Glu Ala Ile Gln Glu Ser Leu Tyr Pro Thr Ala Gln Leu Cys Pro Ser  
565 570 575

Phe Glu Glu Ala Glu Ala Thr Pro Ser Pro Val Leu Pro Asp Ile Val  
580 585 590

Met Glu Ala Pro Leu Asn Ser Leu Leu Pro Ser Ala Gly Ala Ser Val  
595 600 605

Val Gln Pro Ser Val Ser Pro Leu Glu Ala Pro Pro Pro Val Ser Tyr  
610 615 620

Asp Ser Ile Lys Leu Glu Pro Glu Asn Pro Pro Pro Tyr Glu Glu Ala  
625 630 635 640

Met Asn Val Ala Leu Lys Ala Leu Gly Thr Lys Glu Gly Ile Lys Glu  
645 650 655

Pro Glu Ser Phe Asn Ala Ala Val Gln Glu Thr Glu Ala Pro Tyr Ile  
660 665 670

Ser Ile Ala Cys Asp Leu Ile Lys Glu Thr Lys Leu Ser Thr Glu Pro  
675 680 685

Ser Pro Asp Phe Ser Asn Tyr Ser Glu Ile Ala Lys Phe Glu Lys Ser  
690 695 700

Val Pro Glu His Ala Glu Leu Val Glu Asp Ser Ser Pro Glu Ser Glu  
705 710 715 720

Pro Val Asp Leu Phe Ser Asp Asp Ser Ile Pro Glu Val Pro Gln Thr  
725 730 735

Gln Glu Glu Ala Val Met Leu Met Lys Glu Ser Leu Thr Glu Val Ser  
740 745 750

Glu Thr Val Ala Gln His Lys Glu Glu Arg Leu Ser Ala Ser Pro Gln  
755 760 765

Glu Leu Gly Lys Pro Tyr Leu Glu Ser Phe Gln Pro Asn Leu His Ser  
770 775 780

Thr Lys Asp Ala Ala Ser Asn Asp Ile Pro Thr Leu Thr Lys Lys Glu  
785 790 795 800

Lys Ile Ser Leu Gln Met Glu Glu Phe Asn Thr Ala Ile Tyr Ser Asn  
805 810 815

Asp Asp Leu Leu Ser Ser Lys Glu Asp Lys Ile Lys Glu Ser Glu Thr  
820 825 830

Phe Ser Asp Ser Ser Pro Ile Glu Ile Ile Asp Glu Phe Pro Thr Phe  
835 840 845

Val Ser Ala Lys Asp Asp Ser Pro Lys Leu Ala Lys Glu Tyr Thr Asp  
850 855 860

Leu Glu Val Ser Asp Lys Ser Glu Ile Ala Asn Ile Gln Ser Gly Ala  
865 870 875 880

Asp Ser Leu Pro Cys Leu Glu Leu Pro Cys Asp Leu Ser Phe Lys Asn  
885 890 895

Ile Tyr Pro Lys Asp Glu Val His Val Ser Asp Glu Phe Ser Glu Asn  
900 905 910

Arg Ser Ser Val Ser Lys Ala Ser Ile Ser Pro Ser Asn Val Ser Ala  
915 920 925

Leu Glu Pro Gln Thr Glu Met Gly Ser Ile Val Lys Ser Lys Ser Leu  
930 935 940

Thr Lys Glu Ala Glu Lys Lys Leu Pro Ser Asp Thr Glu Lys Glu Asp  
945 950 955 960

Arg Ser Leu Ser Ala Val Leu Ser Ala Glu Leu Ser Lys Thr Ser Val  
965 970 975

Val Asp Leu Leu Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe  
980 985 990

Gly Ala Ser Leu Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val  
995 1000 1005

Ser Val Thr Ala Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile  
1010 1015 1020

Ser Phe Arg Ile Tyr Lys Gly Val Ile Gln Ala Ile Gln Lys Ser  
1025 1030 1035

Asp Glu Gly His Pro Phe Arg Ala Tyr Leu Glu Ser Glu Val Ala  
1040 1045 1050

Ile Ser Glu Glu Leu Val Gln Lys Tyr Ser Asn Ser Ala Leu Gly  
1055 1060 1065

His Val Asn Ser Thr Ile Lys Glu Leu Arg Arg Leu Phe Leu Val  
1070 1075 1080

Asp Asp Leu Val Asp Ser Leu Lys Phe Ala Val Leu Met Trp Val  
1085 1090 1095

Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly Leu Thr Leu Leu Ile  
1100 1105 1110

Leu Ala Leu Ile Ser Leu Phe Ser Ile Pro Val Ile Tyr Glu Arg  
1115 1120 1125

His Gln Val Gln Ile Asp His Tyr Leu Gly Leu Ala Asn Lys Ser  
1130 1135 1140

Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro Gly Leu  
1145 1150 1155

Lys Arg Lys Ala Asp  
1160

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<212> PRT  
<213> Rattus norvegicus

<400> 19

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1 5 10 15

Glu Ala

<210> 20  
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<212> PRT  
<213> Rattus norvegicus

<400> 20

Met Glu Asp Ile Asp Gln Ser Ser Leu Val Ser Ser Ser Thr Asp Ser  
1 5 10 15

Pro Pro Arg Pro Pro Ala Phe Lys Tyr Gln Phe Val Thr Glu Pro  
20 25 30

Glu Asp Glu Glu Asp Glu Glu Glu Glu Asp Glu Glu Glu Asp Asp  
35 40 45

Glu Asp Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly  
50 55 60

Leu Ser Ala Ala Ala Val Pro Pro Ala Ala Ala Ala Pro Leu Leu Asp  
65 70 75 80

Phe Ser Ser Asp Ser Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala  
85 90 95

Ala Pro Pro Ala Ala Pro Glu Arg Gln Pro Ser Trp Glu Arg Ser Pro  
100 105 110

Ala Ala Pro Ala Pro Ser Leu Pro Pro Ala Ala Val Leu Pro Ser  
115 120 125

Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro Pro Pro  
130 135 140

Pro Ala Gly Ala Ser Pro Leu Ala Glu Pro Ala Ala Pro Pro Ser Thr  
145 150 155 160

Pro Ala Ala Pro Lys Arg Arg Gly Ser Gly Ser Val Val Val Asp Leu  
165 170 175

Leu Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala Ser  
180 185 190

Leu Phe Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser Val Thr  
195 200 205

Ala Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser Phe Arg Ile  
210 215 220

Tyr Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly His Pro  
225 230 235 240

Phe Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile Ser Glu Glu Leu Val  
245 250 255

Gln Lys Tyr Ser Asn Ser Ala Leu Gly His Val Asn Ser Thr Ile Lys  
260 265 270

Glu Leu Arg Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys  
275 280 285

Phe Ala Val Leu Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn  
290 295 300

Gly Leu Thr Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Ile Pro  
305 310 315 320

Val Ile Tyr Glu Arg His Gln Val Gln Ile Asp His Tyr Leu Gly Leu  
325 330 335

Ala Asn Lys Ser Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile  
340 345 350

Pro Gly Leu Lys Arg Lys Ala Asp  
355 360

<210> 21  
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<212> PRT  
<213> Rattus norvegicus

<400> 21

Met Asp Gly Gln Lys Lys His Trp Lys Asp Lys Val Val Asp Leu Leu  
1 5 10 15

Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala Ser Leu  
20 25 30

Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser Val Thr Ala  
35 40 45

Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser Phe Arg Ile Tyr  
50 55 60

Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly His Pro Phe

65	70	75	80
Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile Ser Glu Glu Leu Val Gln			
85		90	95
Lys Tyr Ser Asn Ser Ala Leu Gly His Val Asn Ser Thr Ile Lys Glu			
100		105	110
Leu Arg Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys Phe			
115		120	125
Ala Val Leu Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly			
130		135	140
Leu Thr Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Ile Pro Val			
145		150	155
Ile Tyr Glu Arg His Gln Val Gln Ile Asp His Tyr Leu Gly Leu Ala			
165		170	175
Asn Lys Ser Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro			
180		185	190
Gly Leu Lys Arg Lys Ala Asp			
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Met Glu Asp Leu Asp Gln Ser Pro Leu Val Ser Ser Ser Asp Ser Pro			
1	5	10	15
ccc cgg ccg cag ccc gcg ttc aag tac cag ttc gtg agg gag ccc gag			
Pro Arg Pro Gln Pro Ala Phe Lys Tyr Gln Phe Val Arg Glu Pro Glu			
20	25	30	35
gac gag gag gaa gaa gag gag gaa gag gag gac gag gac gaa gac			
Asp Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu Asp			
35	40	45	48
96			
144			

ctg gag gag ctg gag gtg ctg gag agg aag ccc gcc ggg ctg tcc	192
Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly Leu Ser	
50 55 60	
gcg gcc cca gtg ccc acc gcc cct gcc ggc gcg ccc ctg atg gac	240
Ala Ala Pro Val Pro Thr Ala Pro Ala Gly Ala Pro Leu Met Asp	
65 70 75 80	
tgc gga aat gac ttc gtg ccg ccg ccc cgg gga ccc ctg ccg gcc	288
Phe Gly Asn Asp Phe Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala	
85 90 95	
gct ccc ccc gtc gcc ccg gag cgg cag ccg tct tgg gac ccg agc ccg	336
Ala Pro Pro Val Ala Pro Glu Arg Gln Pro Ser Trp Asp Pro Ser Pro	
100 105 110	
gtg tcg tcg acc gtg ccc gca tcc ccg ctg tct gct gcc gca gtc	384
Val Ser Ser Thr Val Pro Ala Pro Ser Pro Leu Ser Ala Ala Ala Val	
115 120 125	
tcg ccc tcc aag ctc cct gag gac gac gag cct ccg gcc ccg cct ccc	432
Ser Pro Ser Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro	
130 135 140	
cct cct ccc ccg gcc agc gtc agc ccc cag gca gag ccc gtg tgg acc	480
Pro Pro Pro Ala Ser Val Ser Pro Gln Ala Glu Pro Val Trp Thr	
145 150 155 160	
ccg cca gcc ccg gct ccc gcc gcg ccc ccc tcc acc ccg gcc gcg ccc	528
Pro Pro Ala Pro Ala Pro Ala Pro Pro Ser Thr Pro Ala Ala Pro	
165 170 175	
aag cgc agg ggc tcc tcg ggc tca gtg gat gag acc ctt ttt gct ctt	576
Lys Arg Arg Gly Ser Ser Gly Ser Val Asp Glu Thr Leu Phe Ala Leu	
180 185 190	
cct gct gca tct gag cct gtg ata cgc tcc tct gca gaa aat atg gac	624
Pro Ala Ala Ser Glu Pro Val Ile Arg Ser Ser Ala Glu Asn Met Asp	
195 200 205	
ttg aag gag cag cca ggt aac act att tcg gct ggt caa gag gat ttc	672
Leu Lys Glu Gln Pro Gly Asn Thr Ile Ser Ala Gly Gln Glu Asp Phe	
210 215 220	
cca tct gtc ctg ctt gaa act gct gct tct ctt cct tct ctg tct cct	720
Pro Ser Val Leu Leu Glu Thr Ala Ala Ser Leu Pro Ser Leu Ser Pro	
225 230 235 240	
ctc tca gcc gct tct ttc aaa gaa cat gaa tac ctt ggt aat ttg tca	768
Leu Ser Ala Ala Ser Phe Lys Glu His Glu Tyr Leu Gly Asn Leu Ser	
245 250 255	
aca gta tta ccc act gaa gga aca ctt caa gaa aat gtc agt gaa gct	816
Thr Val Leu Pro Thr Glu Gly Thr Leu Gln Glu Asn Val Ser Glu Ala	
260 265 270	
tct aaa gag gtc tca gag aag gca aaa act cta ctc ata gat aga gat	864

Ser Lys Glu Val Ser Glu Lys Ala Lys Thr Leu Leu Ile Asp Arg Asp			
275	280	285	
tta aca gag ttt tca gaa tta gaa tac tca gaa atg gga tca tcg ttc			912
Leu Thr Glu Phe Ser Glu Leu Glu Tyr Ser Glu Met Gly Ser Ser Phe			
290	295	300	
agt gtc tct cca aaa gca gaa tct gcc gta ata gta gca aat cct agg			960
Ser Val Ser Pro Lys Ala Glu Ser Ala Val Ile Val Ala Asn Pro Arg			
305	310	315	320
gaa gaa ata atc gtg aaa aat aaa gat gaa gaa gag aag tta gtt agt			1008
Glu Glu Ile Ile Val Lys Asn Lys Asp Glu Glu Glu Lys Leu Val Ser			
325	330	335	
aat aac atc ctt cat aat caa caa gag tta cct aca gct ctt act aaa			1056
Asn Asn Ile Leu His Asn Gln Gln Glu Leu Pro Thr Ala Leu Thr Lys			
340	345	350	
ttg gtt aaa gag gat gaa gtt gtg tct tca gaa aaa gca aaa gac agt			1104
Leu Val Lys Glu Asp Glu Val Val Ser Ser Glu Lys Ala Lys Asp Ser			
355	360	365	
ttt aat gaa aag aga gtt gca gtg gaa gct cct atg agg gag gaa tat			1152
Phe Asn Glu Lys Arg Val Ala Val Glu Ala Pro Met Arg Glu Glu Tyr			
370	375	380	
gca gac ttc aaa cca ttt gag cga gta tgg gaa gtg aaa gat agt aag			1200
Ala Asp Phe Lys Pro Phe Glu Arg Val Trp Glu Val Lys Asp Ser Lys			
385	390	395	400
gaa gat agt gat atg ttg gct gga ggt aaa atc gag agc aac ttg			1248
Glu Asp Ser Asp Met Leu Ala Ala Gly Gly Lys Ile Glu Ser Asn Leu			
405	410	415	
gaa agt aaa gtg gat aaa aaa tgt ttt gca gat agc ctt gag caa act			1296
Glu Ser Lys Val Asp Lys Lys Cys Phe Ala Asp Ser Leu Glu Gln Thr			
420	425	430	
aat cac gaa aaa gat agt gag agt agt aat gat gat act tct ttc ccc			1344
Asn His Glu Lys Asp Ser Glu Ser Ser Asn Asp Asp Thr Ser Phe Pro			
435	440	445	
agt acg cca gaa ggt ata aag gat cgt cca gga gca tat atc aca tgt			1392
Ser Thr Pro Glu Gly Ile Lys Asp Arg Pro Gly Ala Tyr Ile Thr Cys			
450	455	460	
gct ccc ttt aac cca gca gca act gag agc att gca aca aac att ttt			1440
Ala Pro Phe Asn Pro Ala Ala Thr Glu Ser Ile Ala Thr Asn Ile Phe			
465	470	475	480
cct ttg tta gga gat cct act tca gaa aat aag acc gat gaa aaa aaa			1488
Pro Leu Leu Gly Asp Pro Thr Ser Glu Asn Lys Thr Asp Glu Lys Lys			
485	490	495	
ata gaa gaa aag aag gcc caa ata gta aca gag aag aat act agc acc			1536
Ile Glu Glu Lys Lys Ala Gln Ile Val Thr Glu Lys Asn Thr Ser Thr			
500	505	510	

aaa aca tca aac cct ttt ctt gta gca gca cag gat tct gag aca gat Lys Thr Ser Asn Pro Phe Leu Val Ala Ala Gln Asp Ser Glu Thr Asp 515                       520                       525	1584
tat gtc aca aca gat aat tta aca aag gtg act gag gaa gtc gtg gca Tyr Val Thr Thr Asp Asn Leu Thr Lys Val Thr Glu Glu Val Val Ala 530                       535                       540	1632
aac atg cct gaa ggc ctg act cca gat tta gta cag gaa gca tgt gaa Asn Met Pro Glu Gly Leu Thr Pro Asp Leu Val Gln Glu Ala Cys Glu 545                       550                       555                       560	1680
agt gaa ttg aat gaa gtt act ggt aca aag att gct tat gaa aca aaa Ser Glu Leu Asn Glu Val Thr Gly Thr Lys Ile Ala Tyr Glu Thr Lys 565                       570                       575	1728
atg gac ttg gtt caa aca tca gaa gtt atg caa gag tca ctc tat cct Met Asp Leu Val Gln Thr Ser Glu Val Met Gln Glu Ser Leu Tyr Pro 580                       585                       590	1776
gca gca cag ctt tgc cca tca ttt gaa gag tca gaa gct act cct tca Ala Ala Gln Leu Cys Pro Ser Phe Glu Glu Ser Glu Ala Thr Pro Ser 595                       600                       605	1824
cca gtt ttg cct gac att gtt atg gaa gca cca ttg aat tct gca gtt Pro Val Leu Pro Asp Ile Val Met Glu Ala Pro Leu Asn Ser Ala Val 610                       615                       620	1872
cct agt gct gct tcc gtg ata cag ccc agc tca tca cca tta gaa Pro Ser Ala Gly Ala Ser Val Ile Gln Pro Ser Ser Ser Pro Leu Glu 625                       630                       635                       640	1920
gct tct tca gtt aat tat gaa agc ata aaa cat gag cct gaa aac ccc Ala Ser Ser Val Asn Tyr Glu Ser Ile Lys His Glu Pro Glu Asn Pro 645                       650                       655	1968
cca cca tat gaa gag gcc atg agt gta tca cta aaa aaa gta tca gga Pro Pro Tyr Glu Ala Met Ser Val Ser Leu Lys Lys Val Ser Gly 660                       665                       670	2016
ata aag gaa gaa att aaa gag cct gaa aat att aat gca gct ctt caa Ile Lys Glu Glu Ile Lys Glu Pro Glu Asn Ile Asn Ala Ala Leu Gln 675                       680                       685	2064
gaa aca gaa gct cct tat ata tct att gca tgt gat tta att aaa gaa Glu Thr Glu Ala Pro Tyr Ile Ser Ile Ala Cys Asp Leu Ile Lys Glu 690                       695                       700	2112
aca aag ctt tct gct gaa cca gct ccg gat ttc tct gat tat tca gaa Thr Lys Leu Ser Ala Glu Pro Ala Pro Asp Phe Ser Asp Tyr Ser Glu 705                       710                       715                       720	2160
atg gca aaa gtt gaa cag cca gtg cct gat cat tct gag cta gtt gaa Met Ala Lys Val Glu Gln Pro Val Pro Asp His Ser Glu Leu Val Glu 725                       730                       735	2208
gat tcc tca cct gat tct gaa cca gtt gac tta ttt agt gat gat tca	2256

Asp Ser Ser Pro Asp Ser Glu Pro Val Asp Leu Phe Ser Asp Asp Ser			
740	745	750	
ata cct gac gtt cca caa aaa caa gat gaa act gtg atg ctt gtg aaa		2304	
Ile Pro Asp Val Pro Gln Lys Gln Asp Glu Thr Val Met Leu Val Lys			
755	760	765	
gaa agt ctc act gag act tca ttt gag tca atg ata gaa tat gaa aat		2352	
Glu Ser Leu Thr Glu Thr Ser Phe Glu Ser Met Ile Glu Tyr Glu Asn			
770	775	780	
aag gaa aaa ctc agt gct ttg cca cct gag gga gga aag cca tat ttg		2400	
Lys Glu Lys Leu Ser Ala Leu Pro Pro Glu Gly Gly Lys Pro Tyr Leu			
785	790	795	800
gaa tct ttt aag ctc agt tta gat aac aca aaa gat acc ctg tta cct		2448	
Glu Ser Phe Lys Leu Ser Leu Asp Asn Thr Lys Asp Thr Leu Leu Pro			
805	810	815	
gat gaa gtt tca aca ttg agc aaa aag gag aaa att cct ttg cag atg		2496	
Asp Glu Val Ser Thr Leu Ser Lys Lys Glu Lys Ile Pro Leu Gln Met			
820	825	830	
gag gag ctc agt act gca gtt tat tca aat gat gac tta ttt att tct		2544	
Glu Glu Leu Ser Thr Ala Val Tyr Ser Asn Asp Asp Leu Phe Ile Ser			
835	840	845	
aag gaa gca cag ata aga gaa act gaa acg ttt tca gat tca tct cca		2592	
Lys Glu Ala Gln Ile Arg Glu Thr Glu Thr Phe Ser Asp Ser Ser Pro			
850	855	860	
att gaa att ata gat gag ttc cct aca ttg atc agt tct aaa act gat		2640	
Ile Glu Ile Ile Asp Glu Phe Pro Thr Leu Ile Ser Ser Lys Thr Asp			
865	870	875	880
tca ttt tct aaa tta gcc agg gaa tat act gac cta gaa gta tcc cac		2688	
Ser Phe Ser Lys Leu Ala Arg Glu Tyr Thr Asp Leu Glu Val Ser His			
885	890	895	
aaa agt gaa att gct aat gcc ccg gat gga gct ggg tca ttg cct tgc		2736	
Lys Ser Glu Ile Ala Asn Ala Pro Asp Gly Ala Gly Ser Leu Pro Cys			
900	905	910	
aca gaa ttg ccc cat gac ctt tct ttg aag aac ata caa ccc aaa gtt		2784	
Thr Glu Leu Pro His Asp Leu Ser Leu Lys Asn Ile Gln Pro Lys Val			
915	920	925	
gaa gag aaa atc agt ttc tca gat gac ttt tct aaa aat ggg tct gct		2832	
Glu Glu Lys Ile Ser Phe Ser Asp Asp Phe Ser Lys Asn Gly Ser Ala			
930	935	940	
aca tca aag gtg ctc tta ttg cct cca gat gtt tct gct ttg gcc act		2880	
Thr Ser Lys Val Leu Leu Pro Pro Asp Val Ser Ala Leu Ala Thr			
945	950	955	960
caa gca gag ata gag agc ata gtt aaa ccc aaa gtt ctt gtg aaa gaa		2928	
Gln Ala Glu Ile Glu Ser Ile Val Lys Pro Lys Val Leu Val Lys Glu			
965	970	975	

gct gag aaa aaa ctt cct tcc gat aca gaa aaa gag gac aga tca cca	2976
Ala Glu Lys Lys Leu Pro Ser Asp Thr Glu Lys Glu Asp Arg Ser Pro	
980 985 990	
tct gct ata ttt tca gca gag ctg agt aaa act tca gtt gtt gac ctc	3024
Ser Ala Ile Phe Ser Ala Glu Leu Ser Lys Thr Ser Val Val Asp Leu	
995 1000 1005	
ctg tac tgg aga gac att aag aag act gga gtg gtg ttt ggt gcc	3069
Leu Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala	
1010 1015 1020	
agc cta ttc ctg ctg ctt tca ttg aca gta ttc agc att gtg agc	3114
Ser Leu Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser	
1025 1030 1035	
gta aca gcc tac att gcc ttg gcc ctg ctc tct gtg acc atc agc	3159
Val Thr Ala Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser	
1040 1045 1050	
ttt agg ata tac aag ggt gtg atc caa gct atc cag aaa tca gat	3204
Phe Arg Ile Tyr Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp	
1055 1060 1065	
gaa ggc cac cca ttc agg gca tat ctg gaa tct gaa gtt gct ata	3249
Glu Gly His Pro Phe Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile	
1070 1075 1080	
tct gag gag ttg gtt cag aag tac agt aat tct gct ctt ggt cat	3294
Ser Glu Glu Leu Val Gln Lys Tyr Ser Asn Ser Ala Leu Gly His	
1085 1090 1095	
gtg aac tgc acg ata aag gaa ctc agg cgc ctc ttc tta gtt gat	3339
Val Asn Cys Thr Ile Lys Glu Leu Arg Arg Leu Phe Leu Val Asp	
1100 1105 1110	
gat tta gtt gat tct ctg aag ttt gca gtg ttg atg tgg gta ttt	3384
Asp Leu Val Asp Ser Leu Lys Phe Ala Val Leu Met Trp Val Phe	
1115 1120 1125	
acc tat gtt ggt gcc ttg ttt aat ggt ctg aca cta ctg att ttg	3429
Thr Tyr Val Gly Ala Leu Phe Asn Gly Leu Thr Leu Leu Ile Leu	
1130 1135 1140	
gct ctc att tca ctc ttc agt gtt cct gtt att tat gaa cgg cat	3474
Ala Leu Ile Ser Leu Phe Ser Val Pro Val Ile Tyr Glu Arg His	
1145 1150 1155	
cag gcg cag ata gat cat tat cta gga ctt gca aat aag aat gtt	3519
Gln Ala Gln Ile Asp His Tyr Leu Gly Leu Ala Asn Lys Asn Val	
1160 1165 1170	
aaa gat gct atg gct aaa atc caa gca aaa atc cct gga ttg aag	3564
Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro Gly Leu Lys	
1175 1180 1185	
cgc aaa gct gaa tga	3579

Arg Lys Ala Glu  
1190

<210> 23  
<211> 1192  
<212> PRT  
<213> Homo sapiens

<400> 23

Met Glu Asp Leu Asp Gln Ser Pro Leu Val Ser Ser Ser Asp Ser Pro  
1 5 10 15

Pro Arg Pro Gln Pro Ala Phe Lys Tyr Gln Phe Val Arg Glu Pro Glu  
20 25 30

Asp Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu Asp  
35 40 45

Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly Leu Ser  
50 55 60

Ala Ala Pro Val Pro Thr Ala Pro Ala Ala Gly Ala Pro Leu Met Asp  
65 70 75 80

Phe Gly Asn Asp Phe Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala  
85 90 95

Ala Pro Pro Val Ala Pro Glu Arg Gln Pro Ser Trp Asp Pro Ser Pro  
100 105 110

Val Ser Ser Thr Val Pro Ala Pro Ser Pro Leu Ser Ala Ala Ala Val  
115 120 125

Ser Pro Ser Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro  
130 135 140

Pro Pro Pro Pro Ala Ser Val Ser Pro Gln Ala Glu Pro Val Trp Thr  
145 150 155 160

Pro Pro Ala Pro Ala Pro Ala Ala Pro Pro Ser Thr Pro Ala Ala Pro  
165 170 175

Lys Arg Arg Gly Ser Ser Gly Ser Val Asp Glu Thr Leu Phe Ala Leu  
180 185 190

Pro Ala Ala Ser Glu Pro Val Ile Arg Ser Ser Ala Glu Asn Met Asp  
195 200 205

Leu Lys Glu Gln Pro Gly Asn Thr Ile Ser Ala Gly Gln Glu Asp Phe  
210 215 220

Pro Ser Val Leu Leu Glu Thr Ala Ala Ser Leu Pro Ser Leu Ser Pro  
225 230 235 240

Leu Ser Ala Ala Ser Phe Lys Glu His Glu Tyr Leu Gly Asn Leu Ser  
245 250 255

Thr Val Leu Pro Thr Glu Gly Thr Leu Gln Glu Asn Val Ser Glu Ala  
260 265 270

Ser Lys Glu Val Ser Glu Lys Ala Lys Thr Leu Leu Ile Asp Arg Asp  
275 280 285

Leu Thr Glu Phe Ser Glu Leu Glu Tyr Ser Glu Met Gly Ser Ser Phe  
290 295 300

Ser Val Ser Pro Lys Ala Glu Ser Ala Val Ile Val Ala Asn Pro Arg  
305 310 315 320

Glu Glu Ile Ile Val Lys Asn Lys Asp Glu Glu Glu Lys Leu Val Ser  
325 330 335

Asn Asn Ile Leu His Asn Gln Gln Glu Leu Pro Thr Ala Leu Thr Lys  
340 345 350

Leu Val Lys Glu Asp Glu Val Val Ser Ser Glu Lys Ala Lys Asp Ser  
355 360 365

Phe Asn Glu Lys Arg Val Ala Val Glu Ala Pro Met Arg Glu Glu Tyr  
370 375 380

Ala Asp Phe Lys Pro Phe Glu Arg Val Trp Glu Val Lys Asp Ser Lys  
385 390 395 400

Glu Asp Ser Asp Met Leu Ala Ala Gly Gly Lys Ile Glu Ser Asn Leu  
405 410 415

Glu Ser Lys Val Asp Lys Lys Cys Phe Ala Asp Ser Leu Glu Gln Thr

420                  425                  430

Asn His Glu Lys Asp Ser Glu Ser Ser Asn Asp Asp Thr Ser Phe Pro  
435    440                            445

Ser Thr Pro Glu Gly Ile Lys Asp Arg Pro Gly Ala Tyr Ile Thr Cys  
450    455                            460

Ala Pro Phe Asn Pro Ala Ala Thr Glu Ser Ile Ala Thr Asn Ile Phe  
465    470                            480

Pro Leu Leu Gly Asp Pro Thr Ser Glu Asn Lys Thr Asp Glu Lys Lys  
485    490                            495

Ile Glu Glu Lys Lys Ala Gln Ile Val Thr Glu Lys Asn Thr Ser Thr  
500    505                            510

Lys Thr Ser Asn Pro Phe Leu Val Ala Ala Gln Asp Ser Glu Thr Asp  
515    520                            525

Tyr Val Thr Thr Asp Asn Leu Thr Lys Val Thr Glu Glu Val Val Ala  
530    535                            540

Asn Met Pro Glu Gly Leu Thr Pro Asp Leu Val Gln Glu Ala Cys Glu  
545    550                            560

Ser Glu Leu Asn Glu Val Thr Gly Thr Lys Ile Ala Tyr Glu Thr Lys  
565    570                            575

Met Asp Leu Val Gln Thr Ser Glu Val Met Gln Glu Ser Leu Tyr Pro  
580    585                            590

Ala Ala Gln Leu Cys Pro Ser Phe Glu Glu Ser Glu Ala Thr Pro Ser  
595    600                            605

Pro Val Leu Pro Asp Ile Val Met Glu Ala Pro Leu Asn Ser Ala Val  
610    615                            620

Pro Ser Ala Gly Ala Ser Val Ile Gln Pro Ser Ser Ser Pro Leu Glu  
625    630                            635                            640

Ala Ser Ser Val Asn Tyr Glu Ser Ile Lys His Glu Pro Glu Asn Pro  
645    650                            655

Pro Pro Tyr Glu Glu Ala Met Ser Val Ser Leu Lys Lys Val Ser Gly  
660 665 670

Ile Lys Glu Glu Ile Lys Glu Pro Glu Asn Ile Asn Ala Ala Leu Gln  
675 680 685

Glu Thr Glu Ala Pro Tyr Ile Ser Ile Ala Cys Asp Leu Ile Lys Glu  
690 695 700

Thr Lys Leu Ser Ala Glu Pro Ala Pro Asp Phe Ser Asp Tyr Ser Glu  
705 710 715 720

Met Ala Lys Val Glu Gln Pro Val Pro Asp His Ser Glu Leu Val Glu  
725 730 735

Asp Ser Ser Pro Asp Ser Glu Pro Val Asp Leu Phe Ser Asp Asp Ser  
740 745 750

Ile Pro Asp Val Pro Gln Lys Gln Asp Glu Thr Val Met Leu Val Lys  
755 760 765

Glu Ser Leu Thr Glu Thr Ser Phe Glu Ser Met Ile Glu Tyr Glu Asn  
770 775 780

Lys Glu Lys Leu Ser Ala Leu Pro Pro Glu Gly Gly Lys Pro Tyr Leu  
785 790 795 800

Glu Ser Phe Lys Leu Ser Leu Asp Asn Thr Lys Asp Thr Leu Leu Pro  
805 810 815

Asp Glu Val Ser Thr Leu Ser Lys Lys Glu Lys Ile Pro Leu Gln Met  
820 825 830

Glu Glu Leu Ser Thr Ala Val Tyr Ser Asn Asp Asp Leu Phe Ile Ser  
835 840 845

Lys Glu Ala Gln Ile Arg Glu Thr Glu Thr Phe Ser Asp Ser Ser Pro  
850 855 860

Ile Glu Ile Ile Asp Glu Phe Pro Thr Leu Ile Ser Ser Lys Thr Asp  
865 870 875 880

Ser Phe Ser Lys Leu Ala Arg Glu Tyr Thr Asp Leu Glu Val Ser His

885

890

895

Lys Ser Glu Ile Ala Asn Ala Pro Asp Gly Ala Gly Ser Leu Pro Cys  
900 905 910

Thr Glu Leu Pro His Asp Leu Ser Leu Lys Asn Ile Gln Pro Lys Val  
915 920 925

Glu Glu Lys Ile Ser Phe Ser Asp Asp Phe Ser Lys Asn Gly Ser Ala  
930 935 940

Thr Ser Lys Val Leu Leu Leu Pro Pro Asp Val Ser Ala Leu Ala Thr  
945 950 955 960

Gln Ala Glu Ile Glu Ser Ile Val Lys Pro Lys Val Leu Val Lys Glu  
965 970 975

Ala Glu Lys Lys Leu Pro Ser Asp Thr Glu Lys Glu Asp Arg Ser Pro  
980 985 990

Ser Ala Ile Phe Ser Ala Glu Leu Ser Lys Thr Ser Val Val Asp Leu  
995 1000 1005

Leu Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala  
1010 1015 1020

Ser Leu Phe Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser  
1025 1030 1035

Val Thr Ala,Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser  
1040 1045 1050

Phe Arg Ile Tyr Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp  
1055 1060 1065

Glu Gly His Pro Phe Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile  
1070 1075 1080

Ser Glu Glu Leu Val Gln Lys Tyr Ser Asn Ser Ala Leu Gly His  
1085 1090 1095

Val Asn Cys Thr Ile Lys Glu Leu Arg Arg Leu Phe Leu Val Asp  
1100 1105 1110

Asp Leu Val Asp Ser Leu Lys Phe Ala Val Leu Met Trp Val Phe  
1115 1120 1125

Thr Tyr Val Gly Ala Leu Phe Asn Gly Leu Thr Leu Leu Ile Leu  
1130 1135 1140

Ala Leu Ile Ser Leu Phe Ser Val Pro Val Ile Tyr Glu Arg His  
1145 1150 1155

Gln Ala Gln Ile Asp His Tyr Leu Gly Leu Ala Asn Lys Asn Val  
1160 1165 1170

Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro Gly Leu Lys  
1175 1180 1185

Arg Lys Ala Glu  
1190

<210> 24  
<211> 373  
<212> PRT  
<213> Homo sapiens

<400> 24

Met Glu Asp Leu Asp Gln Ser Pro Leu Val Ser Ser Ser Asp Ser Pro  
1 5 10 15

Pro Arg Pro Gln Pro Ala Phe Lys Tyr Gln Phe Val Arg Glu Pro Glu  
20 25 30

Asp Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu Asp  
35 40 45

Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly Leu Ser  
50 55 60

Ala Ala Pro Val Pro Thr Ala Pro Ala Ala Gly Ala Pro Leu Met Asp  
65 70 75 .80

Phe Gly Asn Asp Phe Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala  
85 90 95

Ala Pro Pro Val Ala Pro Glu Arg Gln Pro Ser Trp Asp Pro Ser Pro  
100 105 110

Val Ser Ser Thr Val Pro Ala Pro Ser Pro Leu Ser Ala Ala Ala Val  
115 120 125

Ser Pro Ser Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro  
130 135 140

Pro Pro Pro Pro Ala Ser Val Ser Pro Gln Ala Glu Pro Val Trp Thr  
145 150 155 160

Pro Pro Ala Pro Ala Pro Ala Ala Pro Pro Ser Thr Pro Ala Ala Pro  
165 170 175

Lys Arg Arg Gly Ser Ser Gly Ser Val Val Val Asp Leu Leu Tyr Trp  
180 185 190

Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala Ser Leu Phe Leu  
195 200 205

Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser Val Thr Ala Tyr Ile  
210 215 220

Ala Leu Ala Leu Leu Ser Val Thr Ile Ser Phe Arg Ile Tyr Lys Gly  
225 230 235 240

Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly His Pro Phe Arg Ala  
245 250 255

Tyr Leu Glu Ser Glu Val Ala Ile Ser Glu Glu Leu Val Gln Lys Tyr  
260 265 270

Ser Asn Ser Ala Leu Gly His Val Asn Cys Thr Ile Lys Glu Leu Arg  
275 280 285

Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys Phe Ala Val  
290 295 300

Leu Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly Leu Thr  
305 310 315 320

Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Val Pro Val Ile Tyr  
325 330 335

Glu Arg His Gln Ala Gln Ile Asp His Tyr Leu Gly Leu Ala Asn Lys  
340 345 350

Asn Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro Gly Leu  
355 360 365

Lys Arg Lys Ala Glu  
370

<210> 25  
<211> 199  
<212> PRT  
<213> Homo sapiens

<400> 25

Met Asp Gly Gln Lys Lys Asn Trp Lys Asp Lys Val Val Asp Leu Leu  
1 5 10 15

Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala Ser Leu  
20 25 30

Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser Val Thr Ala  
35 40 45

Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser Phe Arg Ile Tyr  
50 55 60

Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly His Pro Phe  
65 70 75 80

Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile Ser Glu Glu Leu Val Gln  
85 90 95

Lys Tyr Ser Asn Ser Ala Leu Gly His Val Asn Cys Thr Ile Lys Glu  
100 105 110

Leu Arg Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys Phe  
115 120 125

Ala Val Leu Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly  
130 135 140

Leu Thr Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Val Pro Val  
145 150 155 160

Ile Tyr Glu Arg His Gln Ala Gln Ile Asp His Tyr Leu Gly Leu Ala  
165 170 175

Asn Lys Asn Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro  
180 185 190

Gly Leu Lys Arg Lys Ala Glu  
195

<210> 26  
<211> 473  
<212> PRT  
<213> Homo sapiens

<400> 26

Met Lys Arg Ala Ser Ala Gly Gly Ser Arg Leu Leu Ala Trp Val Leu  
1 5 10 15

Trp Leu Gln Ala Trp Gln Val Ala Ala Pro Cys Pro Gly Ala Cys Val  
20 25 30

Cys Tyr Asn Glu Pro Lys Val Thr Thr Ser Cys Pro Gln Gln Gly Leu  
35 40 45

Gln Ala Val Pro Val Gly Ile Pro Ala Ala Ser Gln Arg Ile Phe Leu  
50 55 60

His Gly Asn Arg Ile Ser His Val Pro Ala Ala Ser Phe Arg Ala Cys  
65 70 75 80

Arg Asn Leu Thr Ile Leu Trp Leu His Ser Asn Val Leu Ala Arg Ile  
85 90 95

Asp Ala Ala Ala Phe Thr Gly Leu Ala Leu Leu Glu Gln Leu Asp Leu  
100 105 110

Ser Asp Asn Ala Gln Leu Arg Ser Val Asp Pro Ala Thr Phe His Gly  
115 120 125

Leu Gly Arg Leu His Thr Leu His Leu Asp Arg Cys Gly Leu Gln Glu  
130 135 140

Leu Gly Pro Gly Leu Phe Arg Gly Leu Ala Ala Leu Gln Tyr Leu Tyr  
145 150 155 160

Leu Gln Asp Asn Ala Leu Gln Ala Leu Pro Asp Asp Thr Phe Arg Asp  
165 170 175

Leu Gly Asn Leu Thr His Leu Phe Leu His Gly Asn Arg Ile Ser Ser  
180 185 190

Val Pro Glu Arg Ala Phe Arg Gly Leu His Ser Leu Asp Arg Leu Leu  
195 200 205

Leu His Gln Asn Arg Val Ala His Val His Pro His Ala Phe Arg Asp  
210 215 220

Leu Gly Arg Leu Met Thr Leu Tyr Leu Phe Ala Asn Asn Leu Ser Ala  
225 230 235 240

Leu Pro Thr Glu Ala Leu Ala Pro Leu Arg Ala Leu Gln Tyr Leu Arg  
245 250 255

Leu Asn Asp Asn Pro Trp Val Cys Asp Cys Arg Ala Arg Pro Leu Trp  
260 265 270

Ala Trp Leu Gln Lys Phe Arg Gly Ser Ser Ser Glu Val Pro Cys Ser  
275 280 285

Leu Pro Gln Arg Leu Ala Gly Arg Asp Leu Lys Arg Leu Ala Ala Asn  
290 295 300

Asp Leu Gln Gly Cys Ala Val Ala Thr Gly Pro Tyr His Pro Ile Trp  
305 310 315 320

Thr Gly Arg Ala Thr Asp Glu Glu Pro Leu Gly Leu Pro Lys Cys Cys  
325 330 335

Gln Pro Asp Ala Ala Asp Lys Ala Ser Val Leu Glu Pro Gly Arg Pro  
340 345 350

Ala Ser Ala Gly Asn Ala Leu Lys Gly Arg Val Pro Pro Gly Asp Ser  
355 360 365

Pro Pro Gly Asn Gly Ser Gly Pro Arg His Ile Asn Asp Ser Pro Phe  
370 375 380

Gly Thr Leu Pro Gly Ser Ala Glu Pro Pro Leu Thr Ala Val Arg Pro  
385 390 395 400

Glu Gly Ser Glu Pro Pro Gly Phe Pro Thr Ser Gly Pro Arg Arg Arg  
405 410 415

Pro Gly Cys Ser Arg Lys Asn Arg Thr Arg Ser His Cys Arg Leu Gly  
420 425 430

Gln Ala Gly Ser Gly Gly Thr Gly Asp Ser Glu Gly Ser Gly  
435 440 445

Ala Leu Pro Ser Leu Thr Cys Ser Leu Thr Pro Leu Gly Leu Ala Leu  
450 455 460

Val Leu Trp Thr Val Leu Gly Pro Cys  
465 470

<210> 27  
<211> 473  
<212> PRT  
<213> Mus musculus

<400> 27

Met Lys Arg Ala Ser Ser Gly Gly Ser Arg Leu Leu Ala Trp Val Leu  
1 5 10 15

Trp Leu Gln Ala Trp Arg Val Ala Thr Pro Cys Pro Gly Ala Cys Val  
20 25 30

Cys Tyr Asn Glu Pro Lys Val Thr Thr Ser Cys Pro Gln Gln Gly Leu  
35 40 45

Gln Ala Val Pro Thr Gly Ile Pro Ala Ser Ser Gln Arg Ile Phe Leu  
50 55 60

His Gly Asn Arg Ile Ser His Val Pro Ala Ala Ser Phe Gln Ser Cys  
65 70 75 80

Arg Asn Leu Thr Ile Leu Trp Leu His Ser Asn Ala Leu Ala Arg Ile  
85 90 95

Asp Ala Ala Ala Phe Thr Gly Leu Thr Leu Leu Glu Gln Leu Asp Leu  
100 105 110

Ser Asp Asn Ala Gln Leu His Val Val Asp Pro Thr Thr Phe His Gly  
115 120 125

Leu Gly His Leu His Thr Leu His Leu Asp Arg Cys Gly Leu Arg Glu  
130 135 140

Leu Gly Pro Gly Leu Phe Arg Gly Leu Ala Ala Leu Gln Tyr Leu Tyr  
145 150 155 160

Leu Gln Asp Asn Asn Leu Gln Ala Leu Pro Asp Asn Thr Phe Arg Asp  
165 170 175

Leu Gly Asn Leu Thr His Leu Phe Leu His Gly Asn Arg Ile Pro Ser  
180 185 190

Val Pro Glu His Ala Phe Arg Gly Leu His Ser Leu Asp Arg Leu Leu  
195 200 205

Leu His Gln Asn His Val Ala Arg Val His Pro His Ala Phe Arg Asp  
210 215 220

Leu Gly Arg Leu Met Thr Leu Tyr Leu Phe Ala Asn Asn Leu Ser Met  
225 230 235 240

Leu Pro Ala Glu Val Leu Met Pro Leu Arg Ser Leu Gln Tyr Leu Arg  
245 250 255

Leu Asn Asp Asn Pro Trp Val Cys Asp Cys Arg Ala Arg Pro Leu Trp  
260 265 270

Ala Trp Leu Gln Lys Phe Arg Gly Ser Ser Ser Glu Val Pro Cys Asn  
275 280 285

Leu Pro Gln Arg Leu Ala Asp Arg Asp Leu Lys Arg Leu Ala Ala Ser  
290 295 300

Asp Leu Glu Gly Cys Ala Val Ala Ser Gly Pro Phe Arg Pro Ile Gln  
305 310 315 320

Thr Ser Gln Leu Thr Asp Glu Glu Leu Leu Ser Leu Pro Lys Cys Cys  
325 330 335

Gln Pro Asp Ala Ala Asp Lys Ala Ser Val Leu Glu Pro Gly Arg Pro

340

345

350

Ala Ser Ala Gly Asn Ala Leu Lys Gly Arg Val Pro Pro Gly Asp Thr  
355 360 365

Pro Pro Gly Asn Gly Ser Gly Pro Arg His Ile Asn Asp Ser Pro Phe  
370 375 380

Gly Thr Leu Pro Ser Ser Ala Glu Pro Pro Leu Thr Ala Leu Arg Pro  
385 390 395 400

Gly Gly Ser Glu Pro Pro Gly Leu Pro Thr Thr Gly Pro Arg Arg Arg  
405 410 415

Pro Gly Cys Ser Arg Lys Asn Arg Thr Arg Ser His Cys Arg Leu Gly  
420 425 430

Gln Ala Gly Ser Gly Ala Ser Gly Thr Gly Asp Ala Glu Gly Ser Gly  
435 440 445

Ala Leu Pro Ala Leu Ala Cys Ser Leu Ala Pro Leu Gly Leu Ala Leu  
450 455 460

Val Leu Trp Thr Val Leu Gly Pro Cys  
465 470

<210> 28  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

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Ser Gly Val Pro Ser Asn Leu Pro Gln Arg Leu Ala Gly Arg Asp  
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